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What is Your Diagnosis?

Nan Choisunirachon

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Signalment

A five-kilogram, 11 year-old, male, Poodle dog.

History

The patient was showed up to the Small Animal Teaching Hospital, Faculty of Veterinary Science, Chulalongkorn Universiry with the chief complains of vomiting and abdominal cramp. The owner reported that in addition to the abnormalities of the abdomen as previous description, the dog was still alert and responsive.

Clinical examination

General conditions retrieving from physical examination were alert and responsive. Additionally, other physical signs including mucus membrane color, capillary refilling time, heart rate and heart sound, respiratory rate and sound were in normal limit. However, based on laboratory findings, mild anemia with leukocytosis, increased liver function tests (all of serum ALT, ALP and cholesterol) and positive result of canine SNAP pancreatic lipase (Canine SNAP PL) test were found.

Radiographic examination

In according to the clinical signs and laboratory finding, especially the positive result of the canine SNAP PL, the dog were suggested for abdominal radiography for observing the general condition in the abdomen prior the further diagnostic imaging (ultrasonogram) procedure.

What is your diagnosis?
Please turn to next page for the answer.

Department of Veterinary Surgery, Faculty of Veterinary Science, Chulalongkorn University, Bangkok 10330, Thailand

Radiographic findings

The right abdominal radiographic view of this canine patient showed the poor detail of serosal surface at the cranial abdomen. Besides, it was found that the proximal duodenum of this patient was dilated with a small amount of gas accumulation within the lumen. Besides, the alignment of the proximal duodenum was dorsally inclined (arrows). Furthermore, there were multifocal evidence of narrowing intervertebral disc space with sclerotic vertebral endplate at the thirteenth thoracic vertebra to the fourth lumber vertebra and at the caudal vertebral endplate of the seventh lumber and the cranial vertebral endplate of the first sacrum. Unlike the right lateral projection, the ventrodorsal abdominal radiograph of this dog did not revealed any specific signs of the intra-abdominal organs.

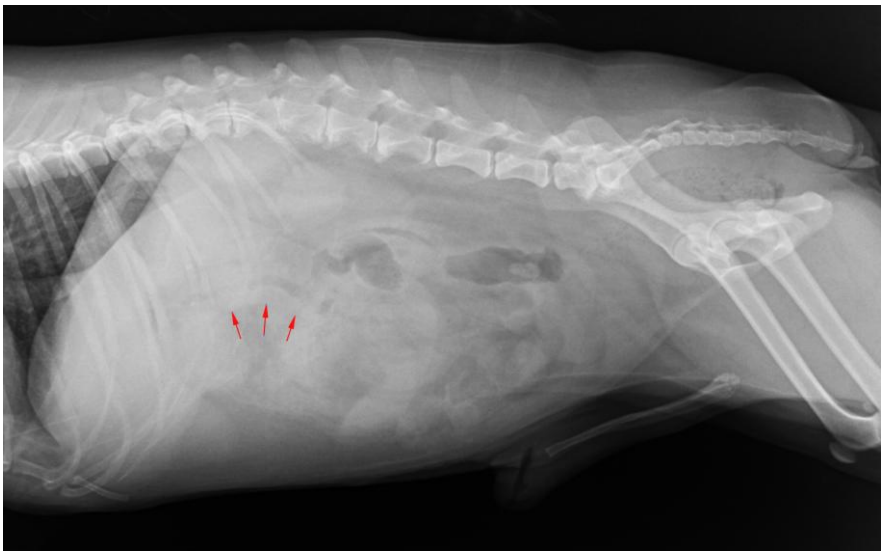

Figure 1 The right lateral abdominal radiograph showed the dorsal deviation of the proximal duodenum (arrows) with the poor detail of adjacent serosal surface. Furthermore, the narrowing intervertebral disc space with osteosclerosis of the vertebral endplate were detected at the T13 – L4 and L7 and S1.

Figure 2 The abdominal radiograph in the same patient on the ventrodorsal view did not show any specific radiographic anatomical changes of abdominal visceral organs compared to the right lateral projection.

Radiographic diagnosis

Pancreatitis.

Discussion

Pancreatitis is one of the clinically frequent diseases found in dog and cat aged over the 5 years old with the differed breed predisposition depended on the country region (Xenoulis, 2005). The clinical variation of pancreatitis would be varied from fatal condition to the chronic pancreatitis. In the severe case, pancreas is enlarged (with or without necrotizing cyst) either at the right limb that could cause the deviation of the proximal duodenum as seen in this patient or at the left limb that may compressed the stomach and spleen. In addition, it was reported that the evidence of gas accumulation in the proximal duodenum and dilated stomach could be detected due to the ileus of the gastrointestinal tract (Xenoulis, 2005). Radiographically, another lesion that could be observed is the inflammation of peri-pancreatic fat (Hyland, 2006). To detect that, the poor detail of serosal lining would be indicated. Although, there are several criteria to indicate pancreatitis on abdominal radiographs, sensitivity and specificity of that result were unpleasant. Clinically, pancreatitis must be confirmed by the evaluation of the serum pancreatic lipase immunoreactivity assay that the result must be over 400 µg/L. However to differentiate the stage and appearance of pancreatitis, ultrasonography with or without tissue biopsy must be performed (Xenoulis, 2005; Hyland, 2006; Bhutani et al., 2009; Adrian et al., 2015). Nevertheless, in advanced cases such as pancreatitis with portal vein thrombosis, abdominal ultrasound is difficult to investigate due to abdominal pain and gas accumulation in gastrointestinal tract at cranial abdomen that could impede the evaluating procedure. Adrian and colleagues (2015) reported that in severe case of pancreatitis with suspected portal vein thrombosis, post-contrast enhanced computed tomographic examination in sedate patient revealed much more benefit than ultrasonogram.

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